ONLINE FOOD ORDERING SYSTEM FOR COLLEGE CANTEEN

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2.PROBLEM STATEMENT:

The current system of the canteen management is not computerized and thus there are many problems faced by students and canteen management team. The problems are stated as follows:

1. In college canteen, lot of time is wasted in queues for ordering food.

2. After placing order they also have to wait for the delivery of food.

3. At times it is not possible for the canteen management team to deliver some orders on time because of the crowd and as a result of this recess time gets over and students might get late and miss the particular lecture or practical. There are also problems regarding the cash payment such as unavailability of change.

SRS DOCUMENT

3.INTRODUCTION:

Traditional canteens are based on pen-paper records, cash, manual calculations and manual record keeping of credits which in today's time in an inefficient way to operate a business. We aim to accomplish this task by creating a web application and a mobile application for managing the canteen menu and orders. The proposed application is mainly beneficial for reducing the

time wasted waiting in the queue by sending the orders directly to the kitchen, placing orders in advance & by providing a online payment facility which saves time spent in tendering change. We offer quality solutions to students in the form of Canteen Management software, which can be used in many large scale or small-scale canteens. This system also prominently relieves the burden on the canteen's end, as the entire method of taking orders is computerized. Once an order is placed on the android phone, it is entered into the database and then retrieved, in pretty much real-time, by a desktop application on the canteen's end. Within this application, all items in the order are displayed, along with their equivalent options and supply details, in a summarizing and easy to read manner.

3.1 PURPOSE:

The existing system does not enable customers to understand their payment details, order details, and their due payment at intervals the canteen. During this system, admin does not have the ability to update or create changes to any data and conjointly not having the facility to feature, modify or delete any services that square measure being provided at intervals their canteen. As admin does not have the ability to know what amount offered is out there is on the market is obtainable is accessible is offered for explicit product or services that square measure being available at intervals their search, they are doing ineffectual, to build, to form, to create, fast action, and by that it will make their huge loss for his or her daily business transactions.

3.2 SCOPE:

This system will allow their users to know what items are available under their canteen shop and its price at which they are available. In the meantime, customers are also provided with the option of buying a specific item. If the customer enters the yes option, then they can enter the number of quantities for each product they will able to get the bills for the items which they have purchased and finally back up their purchased items from the pickup center. Thus, the admin will only be having the duty to visualize the final bills and supply higher services to their new and existing customers.

4.TECHNOLOGIES TO BE USED:

SYSTEM WORKING:

Ordering Food via Android App Initially, students have to order their food through this app. There are two menus for both veg and non-veg dishes. Students have to select the dish which they want to order and then go for the payment mood. We have provided only payment mood. Then, they can confirm their order.

4.1 Delivery of Order :

A QR scanning machine will be installed at the canteen management side which will scan generated QR code via the Android app. As the QR code gets scanned at the canteen side, the

canteen owner will come to know that you are present at the canteen side for taking your delivery. Once your order is ready from the kitchen, your order number will be displayed on the LCD screen, and also your number will be announced on the speaker. You just have to receive the order from the counter. As you receive your order from the counter, the Raspberry Pi will make changes in the database that order is successfully delivered. Also, we required a power supply at the canteen side so that all these details are stored in the Raspberry Pi and also the canteen's server network to maintain a proper record of each order.

4.2 Validation of QR Code:

The order will be valid for 60 minutes. The students can cancel their order within 60 minutes, and after 60 minutes, if students were unable to receive their order, the payment will not be returned to them.

If the order is canceled before 45 minutes after the order is placed, the money will be refunded to the student's account. For example, if a student is using a digital wallet for the payment purpose, and when he/she asked for a refund, the refunded money is returned to the digital wallet. Sometimes there are possibilities of a network issue in the crowded area, so we have also provided Wi-Fi facility for the students so that problems that can occur during ordering the food can be reduced.

5. TOOLS TO BE USED Payment

5.1 Payment Mode:

For the payment mode, there we have provided two options as mentioned below:

5.2 **Cards:**

Debit and credit cards: Net banking facilities are provided to the user or students which makes the payment mode is easier. The user only has to add his/her card details in the app, which is safe. Once the card details are added the user can save it and use it again if he/she is ordering the food next time.

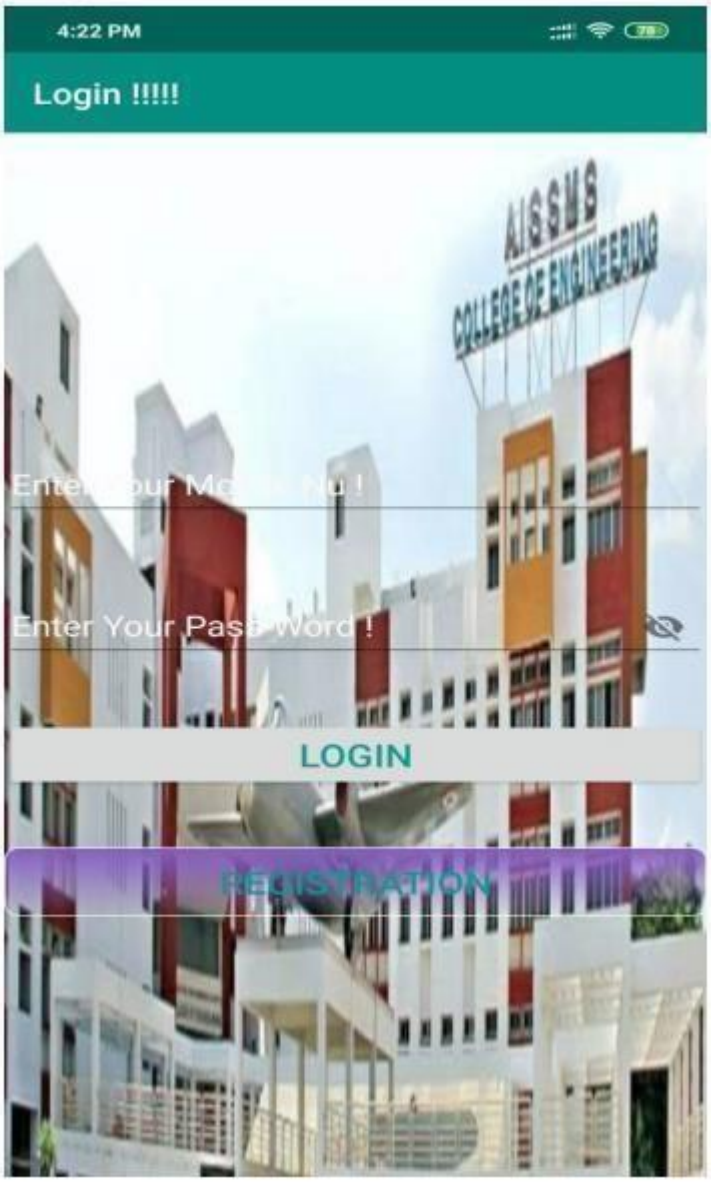
5.3 **Digital Wallets:**

There are various digitals wallets app available which can be used for payment purpose. These are PayTM, PhonePe, MobiKwik, etc., which contain the user's banking details. Also, it has different cashback offers which basically attracts the user.

5.4 Menu Updating:

The menu updating facility is not provided to the canteen owner but it is provided to the IT person who is handling the software part of the Android app. If the owner needs any specific changes in the menu, he can ask the IT person, because the android coding part is difficult to understand for the canteen owner.

6. OVER VIEW:


4:22 PM
Login !!!!!
A.I.S.S.M.S
COLLEGE OF ENGINEERING
Enter Your Mo Nu !
Enter Your Pass Word !
LOGIN
REGISTRATION


College Canteen
VIEW BREAKFAST
VIEW LUNCH
LOGOUT


5:07 PM
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1 Tea 10
2 Coffe 15
3 Vada Samber 25


College Canteen
BUTTON

6.1 OVERALL DESCRIPTION:

The online food ordering system for the college canteen facilitates convenient and efficient food ordering for students and staff. Users can browse menus, place orders, and make payments through a user-friendly platform, ensuring a seamless dining experience. The system integrates with the canteen's operations, optimizing order processing and enhancing overall service quality. Real-time updates on order status and delivery notifications contribute to a streamlined and satisfying food ordering process.

6.2 PRODUCT PERSPECTIVE:

From a product perspective, the online food ordering system for a college canteen serves as an integrated platform that connects users, canteen staff, and the overall food service
infrastructure. It provides a user-friendly interface for students and staff to browse menus, place
orders, and make payments. For canteen staff, the system streamlines order processing, inventory management, and transaction tracking. Integration with existing systems, such as payment gateways and inventory databases, ensures seamless operation. The product aims to enhance efficiency, reduce manual errors, and improve the overall dining experience within the college canteen ecosystem.

7. SOFTWARE INTERFACE:

The software interface for the online food ordering system in a college canteen comprises user-friendly modules for both customers and canteen staff.

7.1 **User Interface (UI) for Customers:**

- Intuitive menu navigation with categories and filters.
- Options for customizing orders, adding special instructions, and selecting delivery/pickup preferences.
- Secure and convenient payment gateways.
- Order history and tracking functionality.
- Responsive design for seamless use on various devices.

7.2 Admin Interface for Canteen Staff:

- Dashboard displaying real-time order updates, sales, and inventory status.
- Menu management tools for adding, updating, or removing items.
- Order processing system with the ability to confirm, prepare, and mark orders as completed.
- User management for handling accounts and access levels.

- Reporting tools to analyze sales, popular items, and customer trends.

7.3 Integration with Existing Systems:

- Seamless integration with payment gateways for secure transactions.

- Connectivity with inventory management systems to track stock levels.

- Synchronization with delivery services if applicable.

A cohesive and well-designed software interface ensures a smooth experience for both customers and canteen staff, contributing to the overall success of the online food ordering system.

8. HARDWARE INTERFACE:

To set up a hardware interface for an online food ordering system for a college canteen, you'll need a few key components:

1. Tablet or Touchscreen Display: This will serve as the interface for customers to browse the menu, select items, and place orders.

2. Card Reader or Mobile Payment Terminal: To facilitate payment transactions, especially if you're accepting credit/debit cards or mobile payments.

3. Printer: For printing out order receipts for both the customers and the kitchen staff.

4. Kitchen Display System (KDS): A screen in the kitchen that displays incoming orders in realtime to the cooking staff.

5. Internet Connectivity: Essential for processing online orders and keeping the system updated in real-time.

6. Point-of-Sale (POS) System Integration: If your canteen already uses a POS system, you'll need to integrate the online ordering system with it for seamless order processing and inventory management.

7. Mounts and Stands: Securely mount the tablet or touchscreen display for easy access by customers.

8. Backup Power Supply: Consider having a backup power supply to ensure continuous operation in case of power outages.

9. Security Measures: Implement security measures to protect customer data and prevent unauthorized access to the system.

10. User-friendly Interface: Design the interface to be intuitive and easy to use for both customers and staff.

9. SYSTEM FUNCTIONS:

Here are some essential system functions for an online food ordering system for a college canteen:

1. User Registration/Login: Allow users to create accounts or log in using existing credentials to access the system.
2. Browse Menu: Display the canteen's menu with categories, descriptions, and prices for easy browsing.
3. Search and Filter: Enable users to search for specific items or filter the menu by category, dietary preferences, or other criteria.
4. Add to Cart: Allow users to select items from the menu and add them to their shopping cart.
5. Modify Order: Permit users to modify the items in their cart, such as changing quantities or removing items.
6. Checkout: Provide a secure checkout process where users can review their order, choose pickup or delivery options, and provide payment details.
7. Payment Processing: Integrate with payment gateways to securely process online payments, including credit/debit cards, mobile wallets, or campus meal plans.
8. Order Confirmation: Send confirmation emails or notifications to users confirming their order details and estimated pickup or delivery time.
9. Order Management: Allow staff to manage incoming orders, view order details, and update order status (e.g., preparing, ready for pickup).
10. Inventory Management: Automatically update inventory levels as orders are placed to ensure accurate stock tracking and prevent overselling.
11. Notifications: Send notifications to users about order status updates, promotions, or special offers.
12. Feedback and Ratings: Collect feedback from users about their ordering experience and allow them to rate and review menu items and overall service.
13. Admin Dashboard: Provide an administrative dashboard for managing menu items, prices, user accounts, and order history.
14. Reporting and Analytics: Generate reports on sales, popular items, customer demographics, and other metrics to inform business decisions and optimize operations.

9.1 USER CHARACTERISTICS:

User characteristics for an online food ordering system in a college canteen encompass a diverse range of individuals, each with specific needs and preferences:

1. Students:

- Tech-savvy users comfortable with online platforms.

- Prefer quick and easy navigation for browsing menus and placing orders.

- Often looking for customization options and real-time order tracking.

2. Faculty and Staff:

- Busy professionals seeking efficient and time-saving solutions.

- Appreciate features like order history for quick reordering.

- May have preferences for scheduled orders or bulk orders.

3. Administrators/Canteen Managers:

- Require an intuitive admin interface for system management.

- Seek tools for menu updates, order tracking, and reporting.

- Focus on user management and ensuring smooth overall operation.

4. Casual Users/Visitors:

- Occasional users who may not be frequent customers.

- Prefer a straightforward and intuitive interface for quick order placement.

5. Technical Support Personnel:

- Individuals responsible for resolving technical issues and providing support.

- Require access to system logs and error reporting tools.

10 .CONSTRAINTS:

Several constraints should be considered when implementing an online food ordering system for a college canteen:

1. Budget: Limited financial resources may restrict the selection of hardware, software, and additional features for the system.

2. Technology Infrastructure: The availability and reliability of internet connectivity and power supply may impact the system's functionality, especially in areas prone to outages.

3. Security and Privacy: Compliance with data protection regulations and ensuring the security of users' personal and payment information is crucial.

4. Integration: Compatibility with existing systems such as point-of-sale (POS), inventory management, and payment processing systems may pose integration challenges.

5. Menu Complexity: The system should accommodate a diverse menu with various items, options, and customizations, while ensuring simplicity and ease of use for customers.

6. User Adoption: Ensuring that students and staff are aware of and comfortable using the online ordering system may require effective communication and training efforts.

7. Peak Demand Handling: The system should be able to handle high volumes of orders during peak times, such as lunch breaks or exam periods, without significant slowdowns or disruptions.

8. Order Fulfillment: Efficient coordination between the kitchen staff and delivery/pickup personnel is essential to ensure timely order preparation and delivery.

9. Food Safety and Quality: Maintaining food safety standards and ensuring the quality of food during delivery or pickup is crucial for customer satisfaction and compliance with regulations.

10. Legal and Regulatory Compliance: Adherence to local regulations and licensing requirements for food preparation, delivery, and online transactions is necessary to avoid legal issues.

11.ASSUMPTIONS AND DEPENDANCIES:

When developing an online food ordering system for a college canteen, several assumptions and dependencies should be considered:

11.1Assumptions:

1. Internet Access: Users and staff have reliable internet access to use the online ordering system without connectivity issues.

2. Device Availability: Users have access to smartphones, tablets, or computers to place orders online.

3. Payment Methods: Users have access to payment methods accepted by the system, such as credit/debit cards, mobile wallets, or campus meal plans.

4. Menu Availability: The canteen has a consistent supply of ingredients to fulfill orders placed through the online system.

5. User Familiarity: Users are familiar with and comfortable using online ordering systems, or adequate training and support are provided for those who need assistance.

11.2 Dependencies:

1. Hardware and Software: Availability of necessary hardware components (e.g., tablets, printers) and software systems (e.g., POS integration, payment gateways) required to implement the online ordering system.

2. Vendor Partnerships: Collaboration with food vendors, suppliers, and technology providers for menu items, ingredients, delivery services, and technical support.

3. Regulatory Compliance: Adherence to local regulations and compliance with food safety, data protection, and payment processing standards.

4. Stakeholder Involvement: Engagement and support from college administration, canteen staff, IT department, and other relevant stakeholders in the planning, implementation, and ongoing management of the system.

5. User Feedback: Continuous feedback from users to identify areas for improvement and address issues related to usability, menu options, delivery/pickup process, and overall satisfaction.

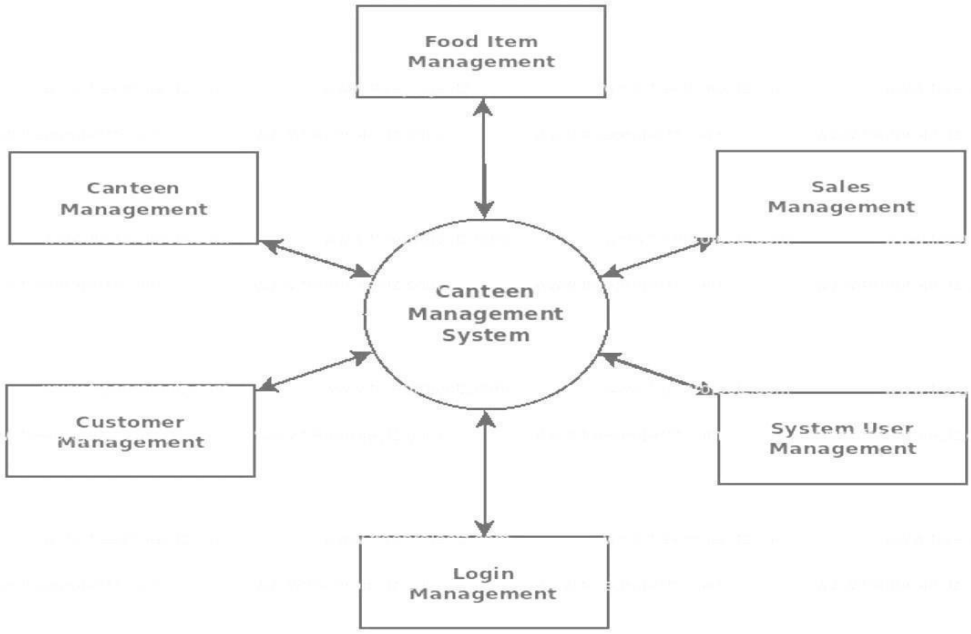
6. Market Demand: Understanding the preferences and needs of the college community to tailor the menu offerings, promotions, and services offered through the online ordering system.

12.Zero Level Data Flow Diagram(0 Level DFD) Of Canteen Management System :

This is the Zero Level DFD of Canteen Management System, where we have eloborated the high level process of Canteen. It's a basic overview of the whole Canteen Management System or process being analyzed or modeled. It's designed to be an at-a-glance view of Canteen Employee,Canteen Record and Sales showing the system as a single high-level process, with its relationship to external entities of Food,Item and Category. It should be easily understood by a wide audience, including Food,Category and Canteen Employee In zero leve DFD of Canteen Management System, we have described the high level flow of the Canteen system.

12.1 High Level Entities and proccess flow of Canteen Management System:

- Managing all the Food
- Managing all the Item
- Managing all the Category
- Managing all the Customer
- Managing all the Canteen Employee
- Managing all the Canteen Record
- Managing all the Sales



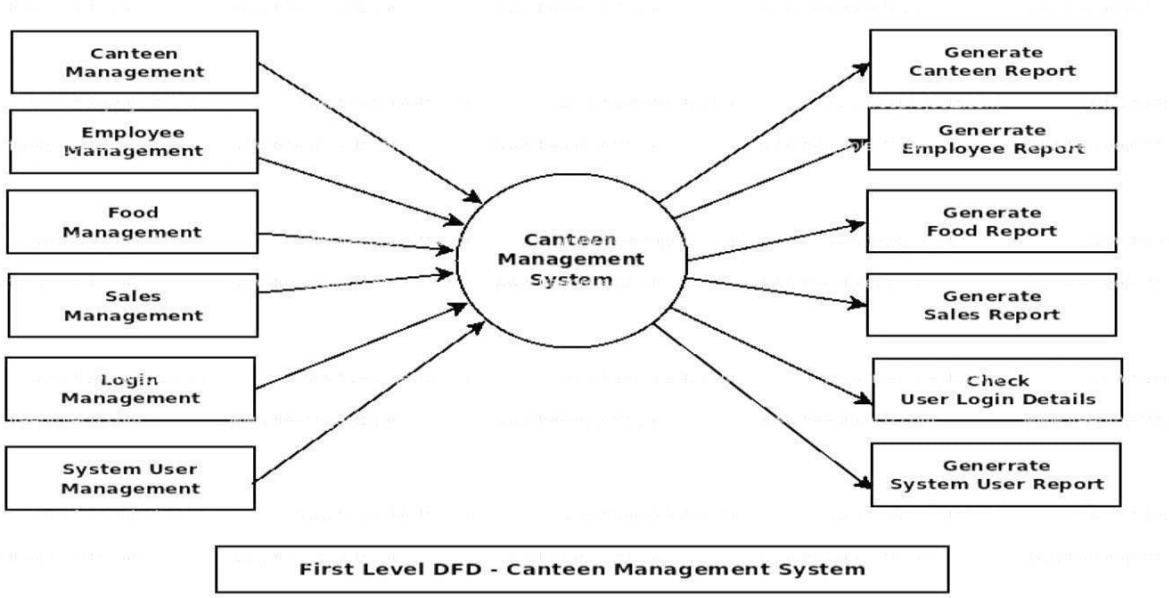
Zero Level DFD - Canteen Management System

12.2 First Level Data Flow Diagram(1st Level DFD) Of Canteen Management System :

First Level DFD (1st Level) of Canteen Management System shows how the system is divided into sub-systems (processes), each of which deals with one or more of the data flows to or from an external agent, and which together provide all of the functionality of the Canteen Management System system as a whole. It also identifies internal data stores of Sales, Canteen Record, Canteen Employee, Customer, Category that must be present in order for the Canteen system to do its job, and shows the flow of data between the various parts of Food, Category, Canteen Record, Sales, Canteen Employee of the system. DFD Level 1 provides a more detailed breakout of pieces of the 1st level DFD. You will highlight the main functionalities of Canteen.

Main entities and output of First Level DFD (1st Level DFD):

- Processing Food records and generate report of all Food
- Processing Item records and generate report of all Item
- Processing Category records and generate report of all Category
- Processing Customer records and generate report of all Customer
- Processing Canteen Employee records and generate report of all Canteen Employee
- Processing Canteen Record records and generate report of all Canteen Record
- Processing Sales records and generate report of all Sales



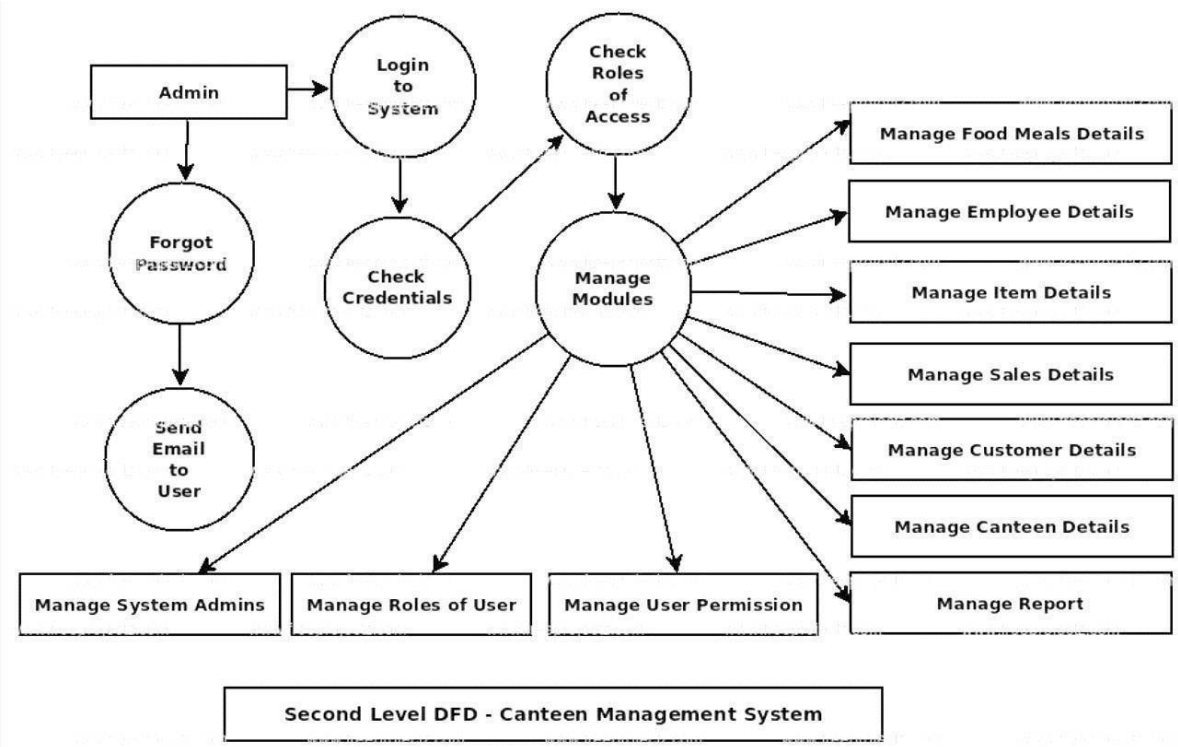
First Level DFD - Canteen Management System

12.3 Second Level Data Flow Diagram(2nd Level DFD) Of Canteen Management System :

DFD Level 2 then goes one step deeper into parts of Level 1 of Canteen. It may require more functionalities of Canteen to reach the necessary level of detail about the Canteen functioning. First Level DFD (1st Level) of Canteen Management System shows how the system is divided into subsystems (processes). The 2nd Level DFD contains more details of Sales, Canteen Record, Canteen Employee, Customer, Category, Item, Food.

12.4 Low level functionalities of Canteen Management System

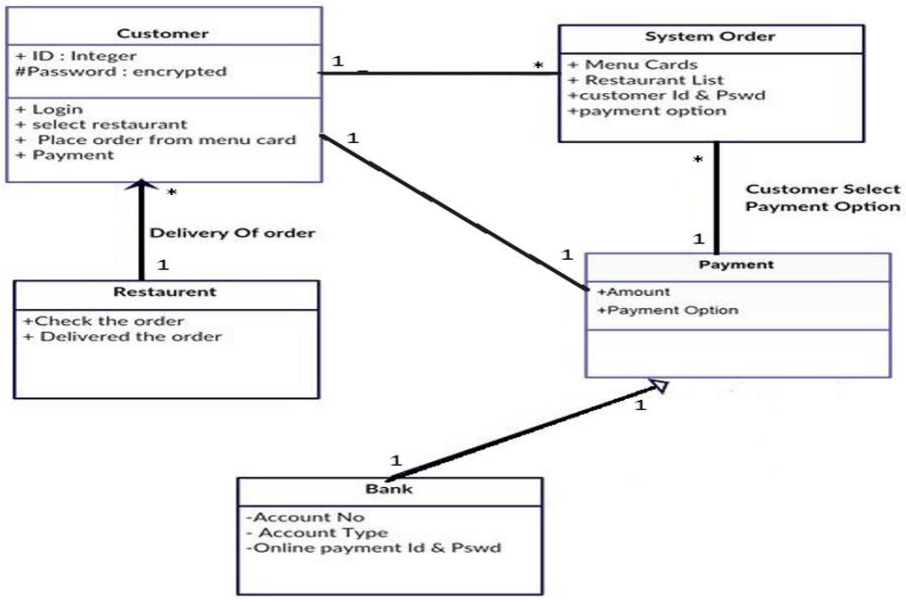
- Admin logins to the system and manage all the functionalities of Canteen Management System
- Admin can add, edit, delete and view the records of Food, Category, Canteen Employee, Sales
- Admin can manage all the details of Item, Customer, Canteen Record
- Admin can also generate reports of Food, Item, Category, Customer, Canteen Employee, Canteen Record
- Admin can search the details of Item, Canteen Employee, Canteen Record
- Admin can apply different level of filters on report of Food, Customer, Canteen Employee
- Admin can tracks the detailed information of Item, Category, Customer, , Canteen Employee



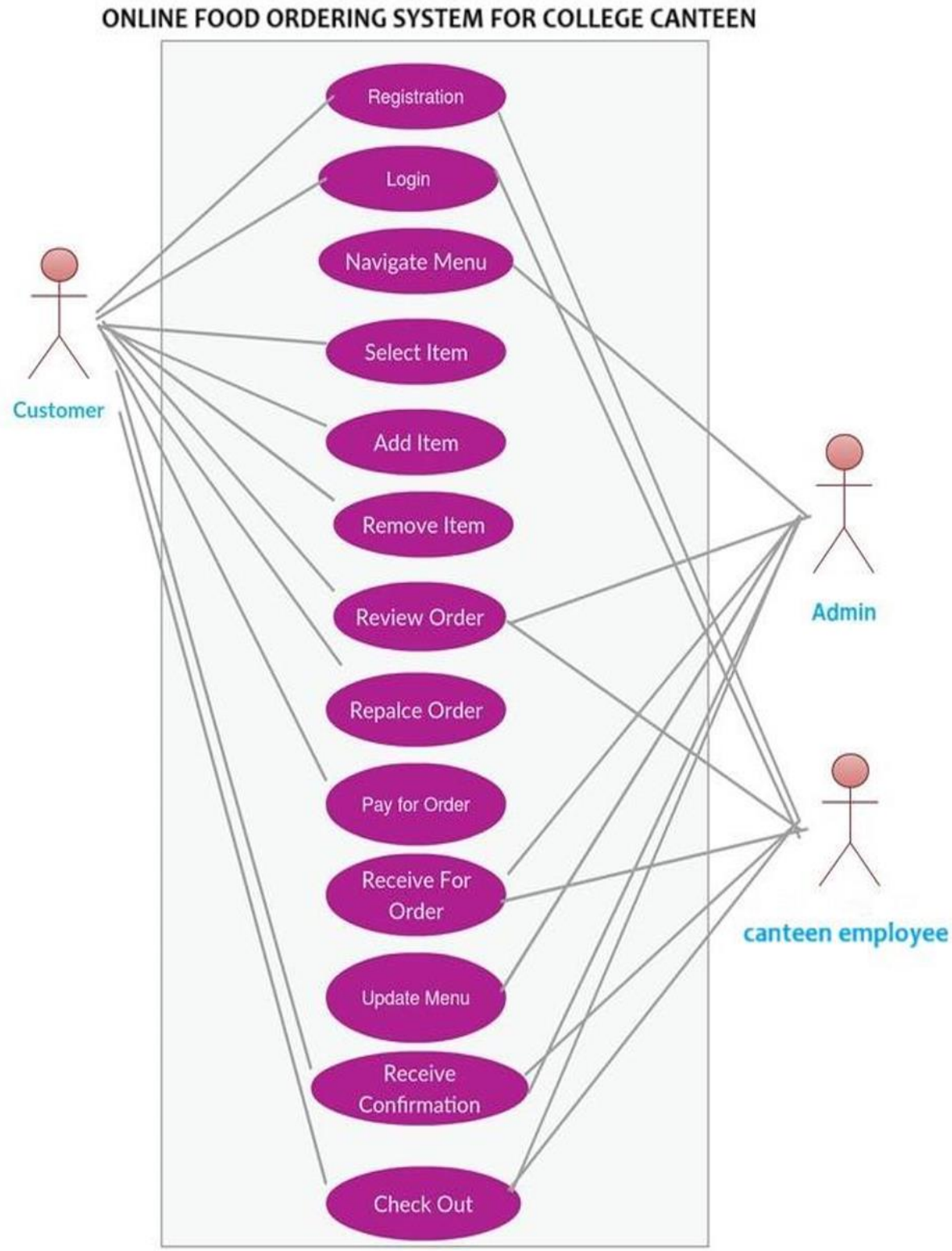
Second Level DFD - Canteen Management System

I. Draw the class diagram for your System.

CLASS DIAGRAM - ONLINE FOOD ORDERING SYSTEM FOR COLLEGE CANTEEN

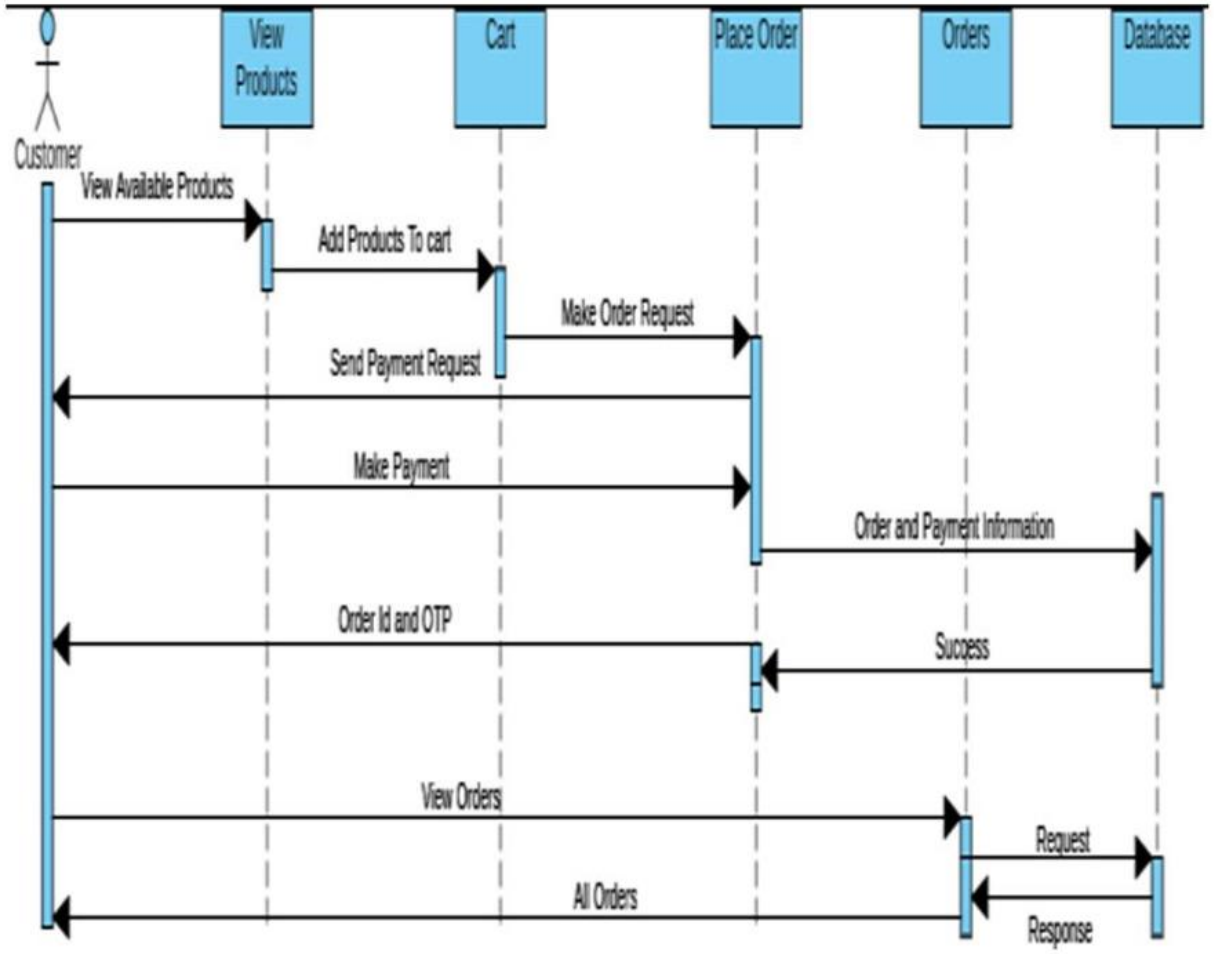


II.To perform the user‘s view analysis for the suggested system: Use case diagram.

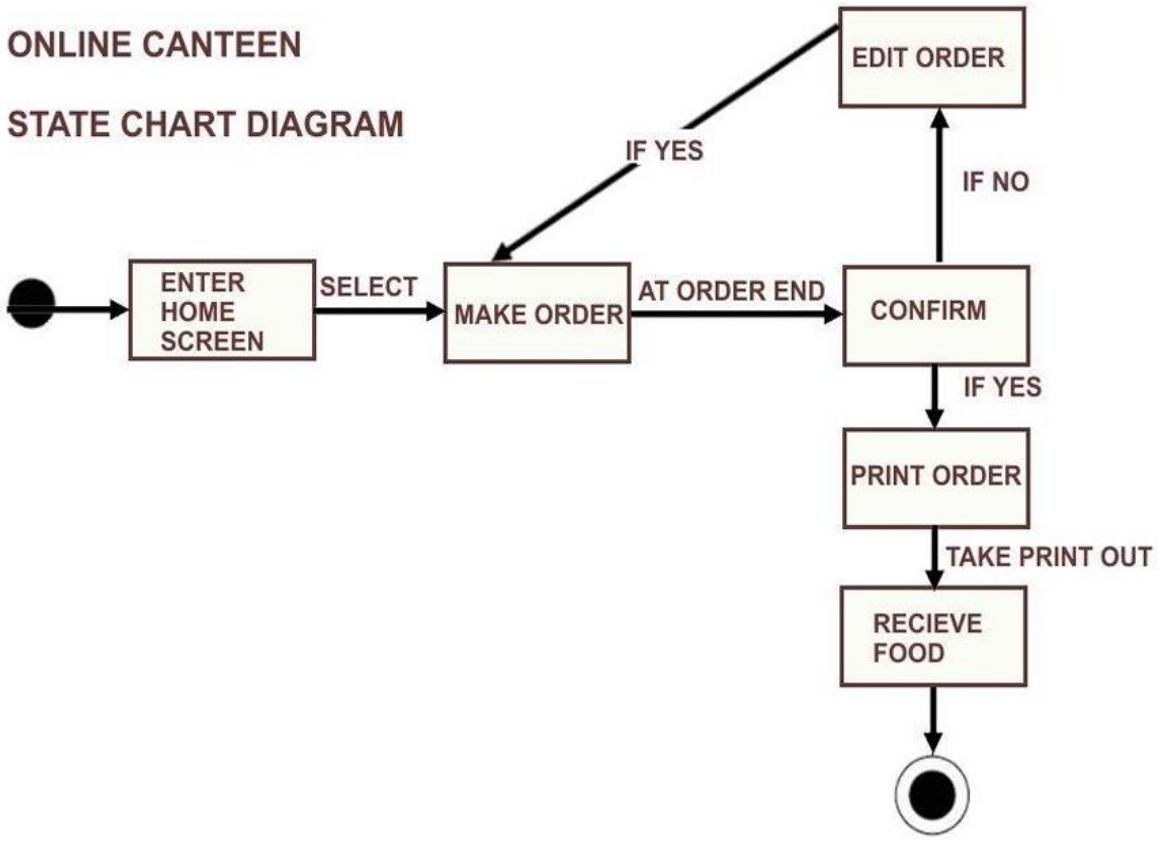


III. sequence diagram:

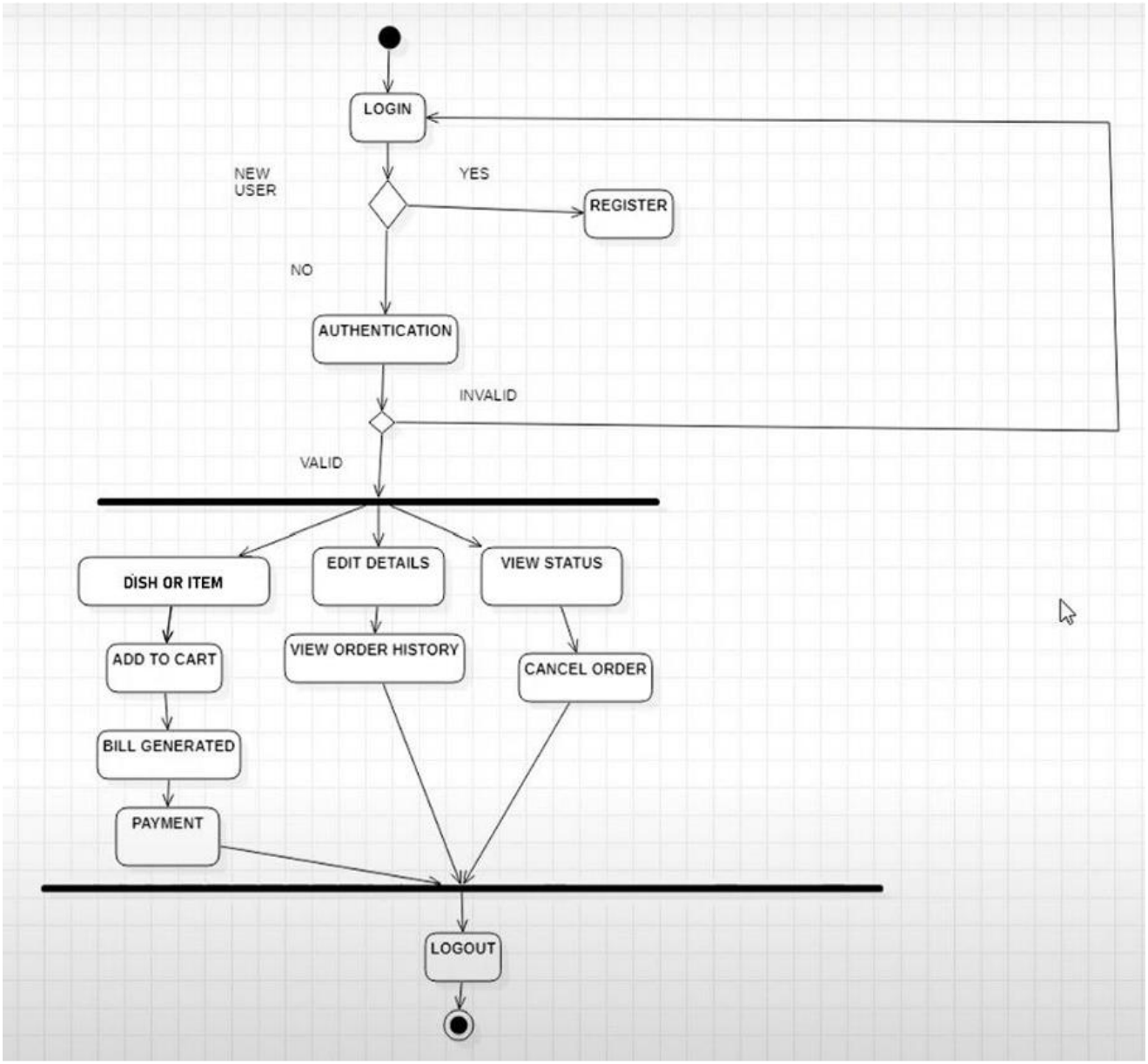
A. Sequence diagram for placing orders



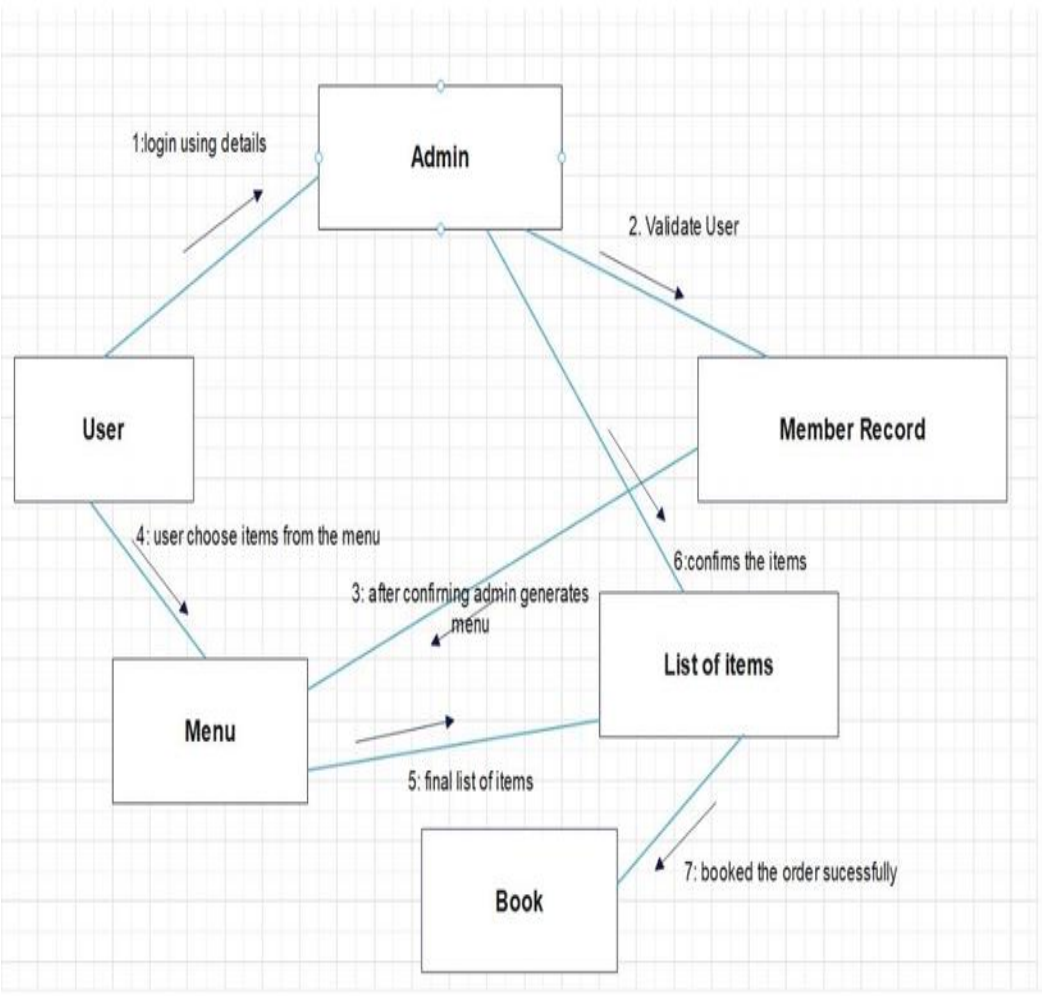
IV. State Diagram For Online Food Ordering System For College Canteen



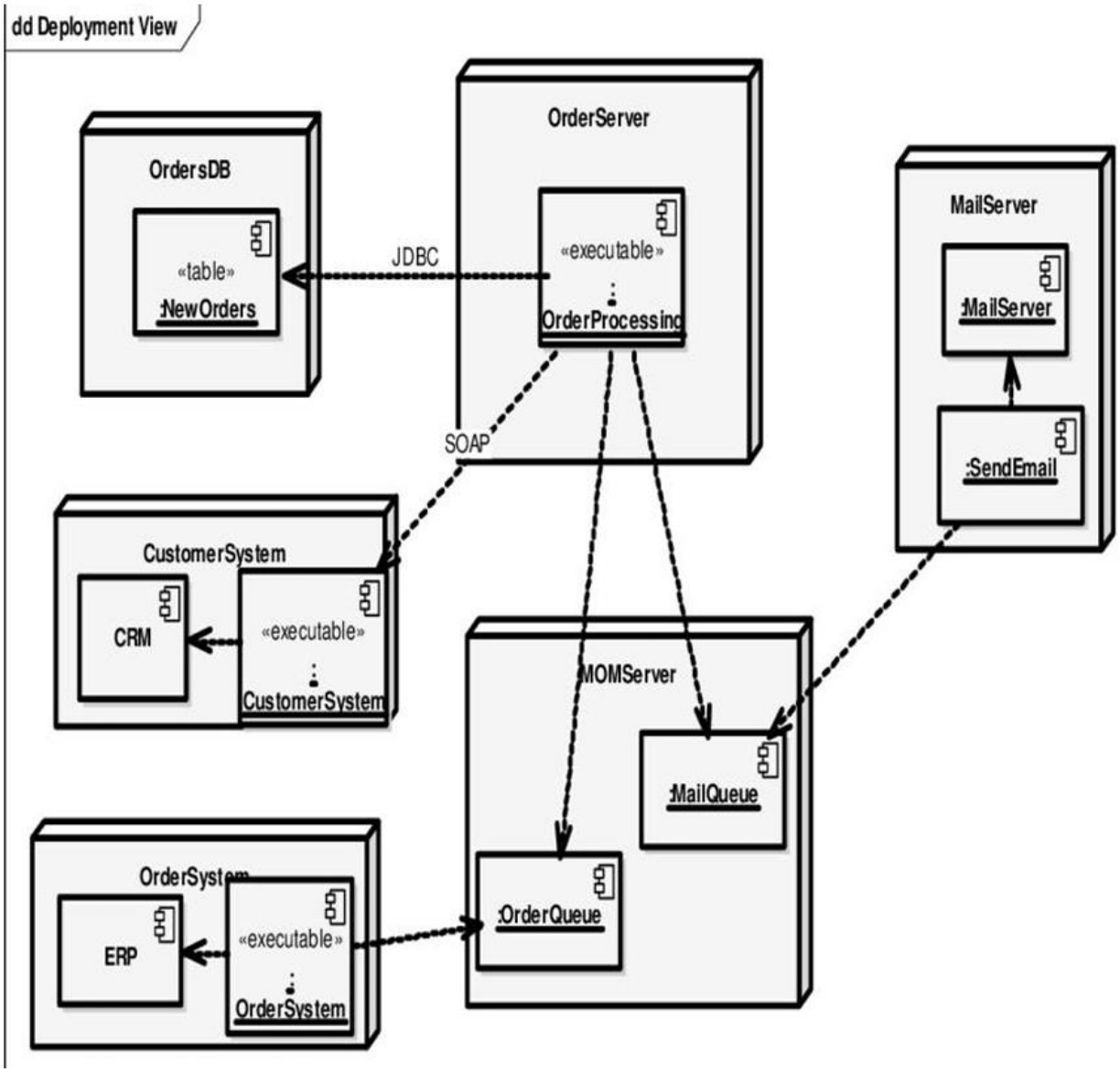
V.Activity diagram:



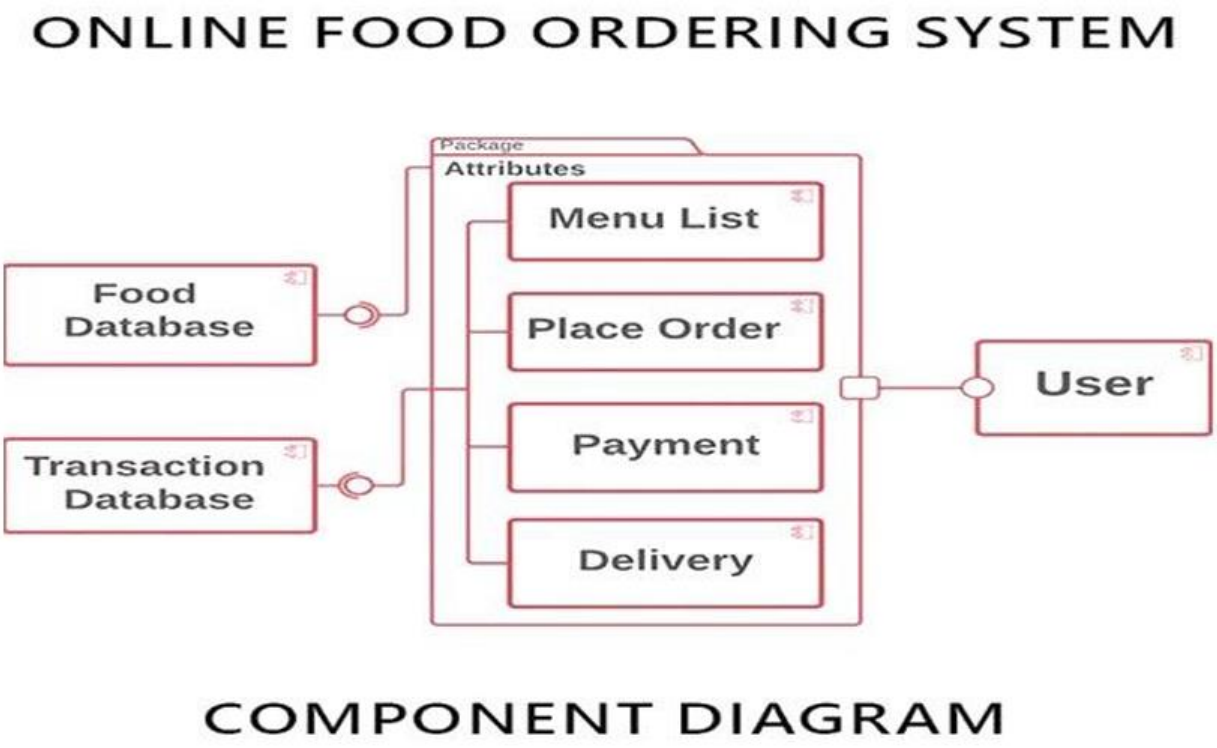
VI. To perform the behavioral view diagram for the suggested system :



VII.DEPLOYMENT DIAGRAM OF FOOD ORDERING SYSTEM



VIII.COMPONENT DIAGRAM :



IX.Interaction Overview Diagram: